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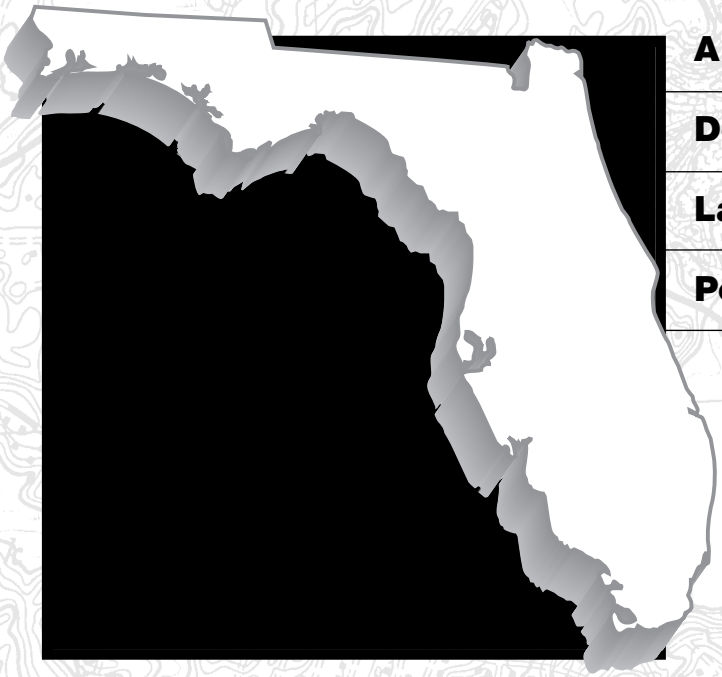
Florida State Primer



A Primer on Developing Florida's Landfill Gas-to-Energy Potential

LANDFILL METHANE OUTREACH PROGRAM

Contents

Introduction

1. The Goals of This Primer

Throughout the country, the number of landfill gas-to-energy (LFGTE) projects is growing. Recovering methane gas at solid waste landfills provides significant environmental and economic benefits by eliminating methane emissions while capturing the emissions' energy value. The methane captured from landfills can be transformed into a cost-effective fuel source for generating electricity and heat, firing boilers, or even powering vehicles.

Permits, incentive programs, and policies for LFGTE project development vary greatly from state to state. To guide LFGTE project developers through the state permitting process and to help them to take advantage of state incentive programs, the U.S. Environmental Protection Agency's (EPA's) Landfill Methane Outreach Program (LMOP) has worked with state agencies to develop individual primers for states participating in the State Ally Program. By presenting the latest information on federal and state regulations and incentives affecting LFGTE projects in this primer, the LMOP and Florida state officials hope to facilitate development of many of the landfills listed in Table A.

To develop this primer, the state of Florida identified all the permits and funding programs that could apply to LFGTE projects developed in Florida. It should be noted, however, that the regulations, agencies, and policies described are subject to change. Changes are likely to occur whenever a state legislature meets, or when the federal government imposes new directions on state and local governments. LFGTE project developers should verify and continuously monitor the status of laws and rules that might affect their plans or the operations of their projects.

Who Should Read This Primer?

This primer is designed to help realize the potential of landfill gas recovery in the state of Florida. It provides information for developers of LFGTE projects, as well as all other participants in such projects:

- Landfill operators
- Utility companies
- Independent power producers
- Utility regulators
- State regulators
- Engineers
- Equipment vendors

What Information Does This Primer Contain?

If you are interested in taking advantage of the economic and environmental opportunities in LFGTE recovery in Florida, you will need to know the regulatory requirements that apply. You will also need to know what economic incentives are available to help make these projects more economically viable.

To address these needs, this primer covers the following topics:

- Federal Regulations and Permits. This section provides information on federal regulations that may pertain to LFGTE projects, including solid waste, air quality, and water quality regulations.
- State Regulations and Permits. This section provides information on state permits that apply to landfill gas recovery projects in Florida.

- Local Regulations and Permits. Local permit approval will often be needed for LFGTE projects. This section offers a step-by-step process you can follow to secure this approval.
- Federal Incentive Programs. This section presents information on federal incentives that may apply to LFGTE projects.
- State Incentive Programs. This section presents information about environmental infrastructure financing opportunities in the state of Florida.
- Electricity Restructuring. This section discusses how renewable energy provisions in state electricity restructuring regulations might apply to LFGTE projects.

2. LFGTE Projects in Florida

The Florida Department of Environmental Protection is a member of the LMOP State Ally Program, which encourages cooperation between EPA and state energy and environmental agencies to promote the development of LFGTE resources. Florida's Landfill Gas Recovery Program focuses on developing consensus among landfill operators, utility companies, independent power producers, project developers, utility regulators, and the state's regulators so they can work together to promote new energy and environmental opportunities from which all Florida residents will benefit.

Nine LFGTE projects were operating in Florida as of June 1999. According to EPA and the state of Florida, 22 landfills have the potential to support economically viable gas-to-energy products. The following table describes Florida's 22 candidate landfills.

Table A Candidate Landfills

Landfill Name	County	Operational Status
Base Line LF Class I	Marion	Open
Bee Ridge LF	Sarasota	Closed
Citrus Central SLF	Citrus	Open
Croom SLF High Corner Road	Hernando	Closed
Gulf Coast LF	Lee	Open
Indian River County LF Class I	Indian River	Open
Majette North SLF	Bay	Closed
Medley LF Expansion	Dade	Open
Naples SLF Cell #6 Collier County	Collier	Open
North Polk Central LF Site 201	Polk	Open
Osceola Road LF	Seminole	Open
Palm Beach County LF #3 Dyer Road	Palm Beach	Closed
Putnam County Central SLF	Putnam	Closed
Saint Lucie County SLF Phase I	St. Lucie	Open
South Dade Dump	Dade	Open
South Dade Shredded Waste LF	Dade	Open
Southport Road SLF Phase I & II	Osceola	Open
Springhill Regional LF	Jackson	Open
Taylor County Central LF	Taylor	Closed
Trail Ridge LF	Duval	Open
U.S. 27 South LF	Leon	Open
Wright LF	Okaloosa	Closed

Source: EPA's Opportunities for Landfill Gas Energy Recovery in Florida: Draft Profiles of Candidate Landfills and Current Projects and information provided by the state of Florida.

3. About the Landfill Methane Outreach Program

To promote the use of landfill gas as an energy source, EPA has established the Landfill Methane Outreach Program (LMOP). The goals of LMOP are to reduce methane emissions from landfills by:

- Encouraging environmentally and economically beneficial LFGTE development
- Removing barriers to developing LFGTE projects

To achieve these goals, EPA establishes alliances with four key constituencies:

- State environmental and energy agencies
- Energy users/providers (including investor-owned, municipal and other public power utilities, cooperatives, direct end users, and power marketers)
- Industry (including developers, engineers, and equipment vendors)
- Community partners (municipal and small private landfill owners and operators; cities, counties, and other local governments; and community groups)

EPA establishes these alliances through a Memorandum of Understanding (MOU). By signing the MOU, each ally and partner acknowledges a shared commitment to promoting landfill gas energy recovery at solid waste landfills, recognizes that the widespread use of landfill gas as an energy resource will reduce methane and other air emissions, and commits to certain activities that enhance the development of this resource.

As of September 1999, more than 270 landfill methane recovery projects were operating in the United States. EPA estimates that up to 750 landfills could install economically viable landfill energy projects by the year 2000.

4. Where To Go For More Information

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Department of Environmental Protection
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Tallahassee, FL 32399-2400
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Florida State Ally Contact
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Tel: (850) 921-9237

U.S. Environmental Protection Agency
Landfill Methane Outreach Program
Mail Code 6202J
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Phone: (888) STAR-YES (782-7937)
Fax: (202) 565-2077
http://www.epa.gov/lmop

Part 1: Regulations and Permits

1. Overview Of Federal Regulations And Permits

The following section discusses federal regulations that may pertain to LFGTE projects. LFGTE projects can be subject to solid waste, air quality, and water quality regulations. The federal regulations are presented in general terms, because individual state/local governments generally develop their own regulations for carrying out the federal mandates. Specific requirements may therefore differ among states. Project developers will have to contact relevant federal agencies and, in some cases, state agencies for more detailed information and applications. The discussion of each key federal regulation/permit contains three components:

- Importance of the regulation/permit to LFGTE project developers
- Applicability to LFGTE projects
- Description of each regulation/permit

1.1 Clean Air Act (CAA)

The CAA regulates emissions of pollutants to ensure that air quality meets specified health and welfare standards. The CAA contains two provisions that may affect LFGTE projects: New Source Performance Standards (NSPS) and New Source Review (NSR). Facilities that are planning to construct a new LFGTE system or that plan to modify a landfill operation to incorporate a LFGTE system must obtain an Authority to Construct (ATC) permit from the responsible air regulatory agency if emissions from the project exceed the major facility emission thresholds. The ATC permit specifies the NSPS and NSR requirements that the project must meet. Once construction is complete, the facility must obtain an operating permit that meets the requirements defined in Title V of the 1990 CAA Amendments. The general requirements of NSPS, NSR, and Title V for LFGTE projects are discussed below.

New Source Performance Standards (NSPS) and Emissions Guidelines for MSW Landfills

Importance LFGTE projects can be part of a compliance strategy to meet EPA's new emissions standards for landfill gas.

Applicability Landfills meeting certain design capacity, age, and emissions criteria are required to collect LFG and to either flare it or use it for energy.

Description EPA final regulations under Title I of the CAA Amendments require affected landfills to collect and control LFG. Specifically, the CAA targets reductions in the emissions of non-methane organic compounds (NMOCs) found in LFG, such as benzene, carbon tetrachloride, and chloroform, because they contribute to local smog formation. For landfills that received waste after November 8, 1987 ("existing landfills"), the standards are "Emissions Guidelines" (EG), and for landfills that commenced construction, reconstruction, modification, or began accepting waste on or after May 30, 1991 ("new landfills"), the standards are "New Source Performance Standards" (NSPS). The final regulations can be found in the Federal Register, March 12, 1996, Vol. 61, No. 49, pgs. 9907-9944.

The basic requirements are the same for both existing and new landfills. Landfills that meet both of the following criteria must comply with the regulations.

- Capacity—maximum design capacity greater than or equal to 2.5 million Mg (or 2.5 million cubic meters, about 2.75 million tons).[1]
- Emissions—annual NMOC emission rate is greater than 50 Mg (about 55 tons).

Air Emissions: New Source Review (NSR) Permitting Process

Importance New LFGTE projects may be required to obtain construction permits under New Source Review (NSR). Depending on the area in which the project is located, obtaining these permits may be the most critical aspect of project approval.

Applicability The combustion of LFG results in emissions of carbon monoxide and oxides of nitrogen. Requirements vary for control of these emissions depending on local air quality. The relevant standards for a particular area will be discussed in Section 2, State Standards and Permits. Applicability of these standards to LFGTE projects will depend on the level of emissions resulting from the technology used in the project and the project's location (i.e., attainment or non-attainment area).

Description CAA regulations require new stationary sources and modifications to existing sources of certain air emissions to undergo NSR before they can operate. The purpose of these regulations is to ensure that sources meet the applicable air quality standards for the area in which they are located. Because these regulations are complex, a landfill owner or operator may want to consult an attorney or expert familiar with NSR for more information about permit requirements in a particular area.

The existing CAA regulations for attainment and maintenance of ambient air quality standards regulate six criteria pollutants — ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter (PM-10), sulfur dioxide (SO_2), and lead. The CAA authorizes the EPA to set both health and public welfare-based national ambient air quality standards (NAAQS) for each criteria pollutant. Areas that meet the NAAQS for a particular air pollutant are classified as being in "attainment" for that pollutant and those that do not are in "non-attainment." Because each state is required to develop an air quality implementation plan (called a State Implementation Plan or SIP) to attain and maintain compliance with the NAAQS in each Air Quality Control Region within the state, specific permit requirements will vary by state. (See 40 CFR 51.160-51.166 for more information.)

The location of the LFGTE project will dictate what kind of construction and operating permits are required. If the landfill is located in an area that is in attainment for a particular pollutant, the LFGTE project must undergo Prevention of Significant Deterioration permitting. Nonattainment Area permitting is required for those landfills that are located in areas that do not meet the NAAQS for a particular air pollutant. Furthermore, the level of emissions from the project determines whether the project must undergo major NSR or minor NSR. The requirements of major NSR permitting are greater than those for minor NSR. The following provides more detail on new source permits:

Prevention of Significant Deterioration Permitting

Prevention of Significant Deterioration (PSD) review is used in attainment areas to determine whether a new or modified emissions source will cause significant deterioration of local air quality. The State air office can assist LFG project developers in determining whether a proposed project requires PSD approval.

[1] Landfills with less than 2.5 million Mg are required to file a design capacity report.

All areas are governed to some extent by PSD regulations because no location is in nonattainment for all criteria pollutants. Applicants must determine PSD applicability for each individual pollutant. For gas-fired sources, PSD major NSR is required if the new source will emit or has the potential to emit any criteria pollutant at a level greater than 250 tons per year.

For each pollutant for which the source is considered major, the PSD major NSR permitting process requires that the applicants determine the maximum degree of reduction achievable through the application of available control technologies. Specifically, major sources may have to undergo any or all of the following four PSD steps:

- Best Available Control Technology (BACT) analysis
- Monitoring of local air quality
- Source impact analysis/modeling
- Additional impact analysis/modeling (i.e., impact on vegetation, visibility, and Class I areas)[2]

Minor sources and modifications (i.e., below 250 tons per year) are exempt from this process, but these sources must still obtain construction and operating air permits (see CFR. 40 CFR 52.21 for more information on PSD).

Nonattainment Air Permitting

An area that does not meet the NAAQS for one or more of the six criteria pollutants is classified as being in "nonattainment" for that pollutant. Ozone is the most pervasive nonattainment pollutant, and the one most likely to affect LFGTE projects. A proposed new emissions source or modification of an existing source located in a nonattainment area must undergo nonattainment major NSR if the new source or the modification is classified as major (i.e., if the new or modified source exceeds specified emissions thresholds). To obtain a nonattainment NSR permit for criteria pollutants, a project must meet two requirements:

- Must use technology that achieves the Lowest Achievable Emissions Rate (LAER) for the nonattainment pollutant
- Must arrange for an emissions reduction at an existing combustion source that offsets the emissions from the new project at specific ratios

Potential Exemptions

EPA recently furnished a guidance document to state and regional permitting authorities that provides an exemption from major NSR permitting requirements for landfill projects that qualify as "pollution control projects." An existing landfill that plans to install a LFGTE recovery project may qualify as a pollution control project as long as it reduces non-methane organic compounds (NMOC) at the site. Under the guidance, the permitting authority may exempt the project from major NSR, provided it meets all other requirements under the CAA and the state, including minor source requirements. In nonattainment areas, offsets will still be required, but need not exceed a 1:1 ratio. States have discretion to exercise the increased flexibility allowed by the guidance on a case-by-case basis.

[2]Class I areas are specified under the Clean Air Act and include national parks. Projects situated within a certain distance from Class I areas are subject to more stringent criteria for emissions levels.

Title V Operating Permit

Importance Many LFGTE projects must obtain operating permits that satisfy Title V of the 1990 CAA Amendments.

Applicability Any LFGTE plant that is a major source, as defined by the Title V regulation (40 CFR Part 70), must obtain an operating permit.

Description Title V of the CAA requires that all major sources obtain new federally enforceable operating permits. Title V is modeled after a similar program established under the National Pollution Discharge Elimination System (NPDES). Each major source must submit an application for an operating permit that meets guidelines spelled out in individual state Title V programs. The operating permit describes the emission limits and operating conditions that a facility must satisfy, and specifies the reporting requirements that a facility must meet to show compliance with the air pollution regulations. A Title V operating permit must be renewed every 5 years.

1.2 Resource Conservation and Recovery Act Subtitle D

Importance Before a LFGTE project can be developed, all Resource Conservation and Recovery Act (RCRA) Subtitle D requirements (i.e., requirements for non-hazardous waste management) must be satisfied.

Applicability Methane is explosive in certain concentrations and poses a hazard if it migrates beyond the landfill facility boundary. Landfill gas collection systems must meet RCRA Subtitle D standards for gas control.

Description Since October 1979, federal regulations promulgated under Subtitle D of RCRA required controls on migration of landfill gas. In 1991, EPA promulgated landfill design and performance standards; the newer standards apply to municipal solid waste landfills that were active on or after October 9, 1993. Specifically, the standards require monitoring of LFG and establish performance standards for combustible gas migration control. Monitoring requirements must be met at landfills not only during their operation, but also for a period of 30 years after closure.

Landfills affected by RCRA Subtitle D are required to control gas by establishing a program to periodically check for methane emissions and prevent offsite migration. Landfill owners and operators must ensure that the concentration of methane gas does not exceed:

- 25 percent of the lower explosive limit for methane in facilities' structures
- The lower explosive limit for methane at the facility boundary

Permitted limits on methane levels reflect the fact that methane is explosive within the range of 5 to 15 percent concentration in air. If methane emissions exceed permitted limits, corrective action (i.e., installation of a LFG collection system) must be taken. Subtitle D may provide an impetus for some landfills to install energy recovery projects in cases where a gas collection system is required for compliance (see 40 CFR Part 258 for more information).

1.3 National Pollutant Discharge Elimination System (NPDES) Permit

Importance LFGTE projects may need to obtain NPDES permits for discharging wastewater that is generated during the energy recovery process.

Applicability LFG condensate forms when water and other vapors condense out of the gas stream due to temperature and pressure changes within the collection system. This wastewater must be removed from the collection system. In addition, LFGTE projects may generate wastewater from system maintenance and cooling tower blowdown.

Description NPDES permits regulate discharges of pollutants to surface waters. The authority to issue these permits is delegated to state governments by EPA. The permits, which typically last five years, limit the quantity and concentration of pollutants that may be discharged. To ensure compliance with the limits, permits require wastewater treatment or impose other operation conditions. The state water offices or EPA regional office can provide further information on these permits.

The permits are required for three categories of sources and can be issued as individual or general permits. A LFGTE project would be included in the "wastewater discharges to surface water from industrial facilities" category and would require an individual permit. An individual permit application for wastewater discharges typically requires information on:

- Water supply volumes
- Water utilization
- Wastewater flow
- Characteristics and disposal methods
- Planned improvements
- Storm water treatment
- Plant operation
- Materials and chemicals used
- Production
- Other relevant information

1.4 Clean Water Act, Section 401

Importance LFGTE projects may need CWA Section 401 certification for constructing pipelines that cross streams or wetlands.

Applicability LFG recovery collection pipes or distribution pipes from the landfill to a nearby gas user may cross streams or wetlands. When construction or operation of such pipes causes any discharge of dredge into streams or wetlands, the project may require Section 401 certification.

Description If the construction or operation of facilities results in any discharge into streams or wetlands, such construction is regulated under Section 401. This requirement may affect the construction of LFGTE project facilities or pipelines to transport LFG.

The applicant must obtain a water quality certification from the State in which the discharge will originate. The certification should then be sent to the U.S. Army Corps of Engineers. The certification indicates that such discharge will comply with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act (CWA).

1.5 Other Federal Permit Programs

The following are brief descriptions of how other federal permits could apply to LFGTE project development.

- RCRA Subtitle C could apply to a LFG project if it produces hazardous waste. While some LFG projects can return condensate to the landfill, many dispose of it through the public sewage system after some form of on-site treatment. In some cases, the condensate may contain high enough concentrations of heavy metals and organic chemicals for it to be classified as a hazardous waste, thus triggering federal regulation.
- The Historic Preservation Act of 1966 or the Endangered Species Act could apply if power lines or gas pipelines associated with a project infringe upon an historic site or an area that provides habitat for endangered species.

2. State Regulations and Permits

This section provides information on permits required by the State of Florida for the development of a LFGTE project.[3] Information provided on each permit includes:

- How the permit is applicable to LFGTE projects
- The appropriate agency contact
- A description of the permit
- The statute/regulation
- Information required and suggestions for a successful application
- The application and review process
- The review/approval period.
- Any fees required.

For an overview of required permits, contact information, and length of the review period, see Tables 2.1 and 2.2. The criteria for LFG collection and LFGTE systems are provided in Table 2.3.

Summary of Permits

The principal permits required for LFGTE projects in Florida are related to air quality and solid waste issues and are regulated by the State of Florida Department of Environmental Protection (DEP). The paragraphs below summarize the permits required by DEP for a LFGTE project.

Air-Related: Because the NSPS landfill requirements of 40 CFR 60 Subpart WWW cannot be divided into two or more Title V operation permits, one Title V application must be submitted by one entity (the landfill, the LFGTE company, or a partnership of the two) to cover all of the elements of the NSPS subpart such as landfill monitoring, gas collection, and gas control. Air construction permit applications will no longer be required for landfills unless a PSD review is required. The air permit conditions for construction will be included in the solid waste construction permit for a landfill. DEP has developed the Application for Air Permit-Long Form to provide a standard form for use by all Title V applicants. The form and instructions are adopted under Florida Administrative Code Rule 62-210.900(1).

[3] The permits contained in this handbook were suggested by state permitting agencies.

The form is available from DEP as a hard-copy document or executable diskette. The diskette version, referred to as ELSA (for Electronic Submission of Application), contains both the form and instructions and is designed for use with Microsoft Windows. ELSA may be obtained from the Division of Air Resources Management in Tallahassee by calling the ELSA Help Line, (904) 921-0771. The ELSA product may also be downloaded from the Internet at http://www.matrixis.com/elsa

DEP will accept hard copies, accurate hard-copy faxes, or read-only data diskettes of the Application for Air Permit, created by applicants or consultants. An applicant who submits the air application on diskette must format the application in a manner prescribed by DEP. The applicant must also submit four hard copies of Section I of the form, containing the applicant's signature and, where required, the professional engineer's signature and seal.

Solid Waste-Related: A solid waste permit is required for all construction, development, or modifications to a municipal solid waste landfill permit.

Permits issued by departments other than DEP are not discussed in this handbook. Project developers should contact state and local agencies for a complete list of applicable permits (see Section 3 for a discussion of potential local permit requirements).

Permitting Assistance

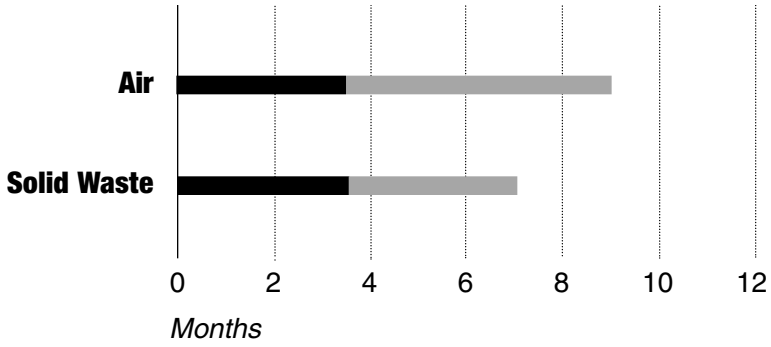
The Department of Environmental Protection has established a small-business technical and environmental compliance assistance program in the Division of Air Resources Management. The program has responsibility to assist small-business stationary sources of air pollution in determining applicable permit requirements, collect and disseminate information concerning compliance methods and technologies, and provide information regarding pollution prevention and accidental release detection and prevention. Small businesses requiring assistance may contact the program office by calling 1-800-SBAP-HLP (1-800-722-7457) or visiting http://www.dep.state.fl.us/air/outreach/sbap/index.htm

[3]The permits contained in this handbook were suggested by state permitting agencies.

Table 2.1 Summary Table of State Regulations/Permits

Standard	Permit	Agency/Contact	Appropriate Review Period
Air	*Construction Permit*	State of Florida Department of Environmental Protection Division of Air Resources Management (For contact information see Appendix A)	3 to 6 months
	Operating Permit	State of Florida Department of Environmental Protection Division of Air Resources Management (For contact information see Appendix A)	varies
Solid Waste	*Permit to Construct or Modify*	State of Florida Department of Environmental Protection Division of Waste Management (For contact information see Appendix A)	3 to 6 months

Table 2.2 Permit Approval Timeline



Notes
Solid black band denotes the minimum review/approval period; gray band the typical.

Table 2.3 Summary of Landfill Gas Systems Criteria

Type of Project	Specific Criteria
Landfill Gas Collection and Energy System	Landfill Gas Collection and Energy System Landfills that receive biodegradable wastes must have a gas monitoring and control system designed to prevent explosions and fires, and to minimize offsite odors and damage to vegetation. Chapter 62-701.600 landfill gas control systems must: • Be designed to prevent the concentration of methane and other gases generated by the landfill from: 1. Exceeding 25% of the lower explosive limit (LEL) for gases in structures on or off site, excluding gas control or recovery components. 2. Exceeding the LEL for gases at or beyond the landfill property boundary. 3. Causing objectionable odors at or beyond the landfill property boundary. • Be designed for site-specific conditions and be installed in each section of the landfill that has been filled to design dimensions. • Be designed to reduce gas pressure in the interior of the landfill by collecting the gases to prevent them from moving laterally. Collection pipes, pathways, or vents must collect gas from at least the uppermost two thirds of the filled waste or where the more anaerobic conditions exist. Air must not be forced into the collection system. Passive venting or suction must be used to extract gas. • Not interfere with or cause failure of the liner or leachate control systems. Flaring of landfill gases may be used as a method of gas control, particularly control of objectionable odors, in accordance with the permitting requirements of Chapter 62-296, F.A.C. Owners or operators of solid waste disposal units that have received biodegradable waste must implement a routine gas monitoring program to ensure that the standards of paragraph (10) (a) of Chapter 62-701.400, F.A.C. are met. • The location of monitoring points and frequency of monitoring must be determined by the following factors: 1. Soil conditions. 2. The hydrogeologic conditions surrounding the facility. 3. The hydraulic conditions surrounding the facility. 4. The location of facility structures and property boundaries. • All monitoring points must be sampled quarterly and the results reported to the Department of Environmental Protection. Landfills using piping or a similar conduit to convey gas must be furnished with a positive means of gas condensate collection and disposal at each low point in the conveyance system.

Type of Project	Specific Criteria
Landfill Gas Collection and Energy System, *continued*	Landfill gas recovery facilities are considered solid waste management facilities and must be constructed and operated only in accordance with a Department of Environmental Protection permit. If a gas recovery facility is included in the approved closure plan or closure permit of the landfill, no separate permit for the facility is required, provided that the facility must meet all of the following requirements: • The application must be on Form 62-701.900(1) and must contain at least the following: 1. The information contained in Rules 62-701.320(7) and 62-701.330(4), F.A.C. 2. Where relevant and practical, the information required in Rule 62-701.600(4), F.A.C. 3. An estimate of the quantities of gas condensate currently collected or expected to be collected, and a description of how the condensate is or will be disposed of. 4. A description of the procedures for sampling, analyzing, and reporting data from the condensate sampling. 5. A closure plan that must include methods to control landfill gases after operation of the recovery facility ceases and any other requirements contained in Rule 62-701.400(10), F.A.C. • The owner or operator of a gas recovery facility must post a performance bond to cover the estimated costs of closing the facility. If the gas recovery facility is included in the approved closure plan or closure permit of the landfill, and if the closure costs are included in the landfill closure cost estimates for which financial responsibility is required by Rule 62-701.630, F.A.C., then no separate proof of financial responsibility is required.

Table 2.4 Air Quality Construction and Operation Permits (Permits to Construct, Modify, and Operate)

Applicability to Landfill Gas Projects

The construction, expansion, or modification of gas recovery systems at a landfill are subject to air quality permit regulations. Emissions from equipment used at LFGTE facilities, such as internal combustion engines, are also subject to state air regulations. However, LFGTE projects may be exempt from some air permits because they emit less than the de minimis regulated level. The need for some air permits may vary depending on the district in which the LFGTE project is located.

Agency Contact

State of Florida
Department of Environmental Protection
Division of Air Resources Management
(See Appendix A for full addresses for DEP/DARM district offices.)

Description

Construction

An air construction permit must be obtained by the owner or operator of any proposed new or modified facility or emissions unit prior to the beginning of construction or modification of the facility or emissions unit. Each applicant for an air construction permit for an emissions unit subject to Rule 62-210.300(1), F.A.C. must provide to DEP, at a minimum, the following information:

- The nature and amounts of emissions from the emissions unit.
- The location, design, construction, and operation of the emissions unit to the extent necessary to allow DEP to determine whether construction or modification of the emissions unit would result in violations of any applicable provisions of Chapter 403, Florida Statutes, or DEP air pollution rules, or whether the construction or modification would interfere with the attainment and maintenance of any state or national ambient air quality standard.

Operation

An air operation permit must be obtained by the owner or operator of any new or modified facility or emissions unit subsequent to construction or modification of the facility or emissions unit and after demonstrating compliance in accordance with the terms and conditions of the construction permit, except as provided in Rules 62-210.360(4) and 62-213.412, F.A.C. The air operation permit has a duration of 5 years.

Only one Application for Air Permit, addressing all construction and operation permit application requirements, need be submitted for facilities classified as Title V sources.

Statute/Regulation

Regulations: Rule 62-210.300, F.A.C.

Information Required/Suggestions

In some cases, the applicant may need to supplement the application form with other information requested on the form or otherwise required by rule or statute. Examples of other such information are plot plans, flow diagrams, control equipment design details, stack test reports, operation and maintenance plans, and air quality monitoring reports.

Application Process

The Application for Air Permit - Long Form can be submitted to the DEP or local air pollution control agency to which the Department has delegated permitting authority. All air construction permit applications subject to review under Rule 62-212.400, F.A.C., (prevention of significant deterioration preconstruction review) or Rule 62-212.500, F.A.C., (nonattainment area preconstruction review) must be submitted to the Bureau of Air Regulation in Tallahassee. Information on the division of permitting responsibilities among DEP and local air program offices for other types of applications may be obtained from the Bureau of Air Regulation or any DEP district air section.

The application form is available as a hard-copy document or a diskette (ELSA: for electronic Submission of Application). The hard copy of the Application for Air Permit and all required supplemental information must be filed with the Department in quadruplicate and in accordance with all other applicable provisions of Chapter 62-4, F.A.C. The ELSA product may be downloaded from the Internet at http://www.dep.state.fl.us/air/arm.html, or received on disk by calling the ELSA hotline at (904) 921-0771.

The Department will also accept accurate hard-copy faxes of the Application for Air Permit or read-only data diskettes created by applicants or consultants; provided, however, that any diskette must be formatted in a manner prescribed by the Department and be accompanied by four hard copies of the Application Information Section of the form (Section I), including all signature pages.

A notice of proposed agency action on the permit application, where the proposed agency is to issue the permit, must be published by any applicant for a construction permit for any proposed new or modified facility or emissions unit.

For units subject to Prevention of Significant Deterioration (PSD) or Nonattainment-Area Preconstruction Review, DEP must notify the public of the opportunity to submit comments and to request a public hearing.

Review Process

Applications are reviewed by the Division of Air Resources or Division of Waste Management Bureau of Solid & Hazardous Waste, FDEP. Within 30 days of receiving an application, the permitting authority must determine whether the application is complete. Within 60 days of receiving a complete application, the permitting authority must take final action.

Review/Approval Period

3 to 6 months for the construction permit; variable for the Title V operating permit

Fees

No processing fee is required in the case of an application for an air operation permit. An application fee is required for an air construction permit ($2,000).

Table 2.5 Solid Waste Permits (Permits to Modify)

Applicability to Landfill Gas Projects	LFGTE projects are part of the engineering controls associated with solid waste landfills; LFGTE projects involve extraction wells or horizontally placed collection layers in the solid waste and the need to engineer or redesign the final cap and the runoff system.
Agency Contact	State of Florida Department of Environmental Protection Waste Management Division (See Appendix A for full addresses for DEP district offices.)
Description	A permit is required for any construction or excavation activity on or in a closed or existing solid waste land disposal area.
Statute/Regulation	Statutory Authority: Chapter 403.707, F.A.C
Information Required/Suggestions	An applicant for a permit to modify a solid waste management facility must publish and provide proof of publication in a newspaper of general circulation in the area where the facility is located.
Application Process	Applications should be submitted to the Department district office where the facility is located. DEP has 30 days in which to ask questions regarding the permit and then 60 days thereafter to issue or deny the permit.
Review Process	Complete permit applications for modification of existing facilities are evaluated by the respective Department district office in accordance with Chapters 62-4 and 62-701, F.A.C. Applications are reviewed by the Division of Air Resources or Division of Waste Management, Bureau of Solid & Hazardous Waste, FDEP. Within 30 days of receiving an application, the permitting authority must determine whether the application is complete. Within 60 days of receiving a complete application, the permitting authority must take final action.
Review/Approval Period	Typically 3 to 6 months
Fees	The fee for a permit can range from $0 to $10,000, depending on the permit type (modification of existing operations, construction, or closure).

3. Overview of Local Regulations and Permits

Within the framework of federal and state regulation, local governments will have some jurisdiction over LFGTE development in nearly all cases. Typically, local permits address issues that affect the surrounding community. These permits generally fall under the categories of construction, environment and health, land use, and water quality/use. Local governments are also responsible for administering some permits for federal and state regulations in addition to their own. For example, many local governments are responsible for ensuring compliance with federal air quality regulations. It should be noted, however, that some local standards and regulations are more strict than state or federal regulations.

Steps to Successful Local Permits Approval:

The following 6 steps will assist LFGTE project developers to achieve successful local permits approval:

Step 1. Determine which local authorities have jurisdiction over the project site.

Step 2. Contact local, city, and/or county planning and public works departments to obtain information about applicable permits and to discuss your plans. Meeting with agency staff to discuss the LFG project and required permits often helps to expedite the permitting process.

Step 3. Obtain essential information regarding each permit, including:

- What information is required
- The permitting process that should be followed
- Time frames (including submittal, hearing, and decision dates)

Step 4. Obtain copies of the regulations to compare and verify what is required in the permit applications. If they differ, contact the appropriate permitting agency.

Step 5. Submit a complete application. Incomplete applications typically result in processing delays.

Step 6. Attend meetings or hearing(s) where the application will be discussed to respond to any questions that are raised. Failure to do so could result in delays

Typical Local Permits

Table 3.1 lists typical local permits and approvals for LFGTE projects.

Table 3.1 Local Regulations and Permits

Permit	Description
Building Permit	Most county/local governments require building permits for construction, which entail compliance with several types of building codes, such as plumbing and electrical. A typical building permit application may require detailed final plans for structures, including electrical and plumbing plans, floor layout, sewage facilities, storm water drainage plan, size and shape of lot and buildings, setback of buildings from property lines and drain field, access, size and shape of foundation walls, air vents, window access, and heating or cooling plants (if included in the design).
Zoning/Land Use	Most communities have a zoning and land use plan that identifies where different types of development are allowed (i.e., residential, commercial, and industrial). The local zoning board determines whether a particular project meets local land use criteria and can grant variances if conditions warrant. A landfill gas project may require an industrial zoning classification.
Storm Water Management	Some local public works departments require a permit for discharges during construction and operation of a LFGTE project. Good facility design that maintains the pre-development runoff characteristics of the site will typically enable the project to meet permitting requirements easily.
Solid Waste Disposal	A LFGTE project may generate solid wastes, such as packaging material, cleaning solvents, and equipment fluids. If the landfill is closed, disposal of these solid wastes may be subject to review by a local authority.
Wastewater	The primary types of wastewater likely to be generated by a LFGTE project include maintenance wastewater and cooling tower blowdown. The city engineer's office should be contacted to provide information about available wastewater handling capacity and any unique condensate treatment requirements or permits for landfills.
Fire Hazards and Precautions	The mix of gases in landfill gas has a moderate to high explosion potential; methane is explosive in concentrations of 5 to 15 percent in air. Because methane has the potential to migrate from the landfill to onsite or offsite structures, it poses a significant public safety hazard. EPA requires that methane concentrations be less than 5 percent at a landfill property line, and less than 2.5 percent of the lower explosive limit (LEL) in a facility's structures. County regulations may call for even stricter standards to be observed at the landfill.
Noise	Most local zoning ordinances stipulate the maximum allowable decibel levels from noise sources. These levels vary depending on the location of the site. For example, LFGTE recovery projects located near residential areas will likely have to comply with stricter noise level standards than projects located in non-populated areas.

Part 2: Incentive Programs

1. Overview of Federal Incentive Programs

There are three federal incentive programs that may apply to LFGTE projects: the Section 29 Tax Credit, the Renewable Energy Production Incentive (REPI), and the Qualifying Facilities (QF) Certification. Each program is described below.

1.1 Renewable Energy Production Incentive (REPI)

The Renewable Energy Production Incentive (REPI), mandated under the Energy Policy Act of 1992, may provide a cash subsidy of up to 1.5 cents per kilowatt hour to owners and operators of qualified renewable energy sources, such as landfills, that began operation between October 1993 and September 2003.[4] Private sector entities may qualify to earn tax incentives based on a tier system. Tier 1 facilities (solar, wind, geothermal, or closed loop biomass) receive full payments or pro rata payments if funds are too minimal to match all requests. Any remaining funds fall to Tier 2 which includes landfill gas facilities. If there are insufficient funds to cover Tier 2 applicants, a pro-rata system is implemented. The Department of Energy (DOE) will make incentive payments for 10 fiscal years, beginning with the fiscal year in which application for payment for electricity generated by the facility is first made and the facility is determined by DOE to be eligible for receipt of an incentive payment. The period for payment under this program ends in fiscal year 2013. REPI payments are subject to adjustment because they are appropriated by Congress each year.

For further information, contact:

U.S. Department of Energy
National Renewable Energy Laboratory
Golden Field Office
Golden, Colorado 80403
(303) 275-4795

U.S. Department of Energy
Efficiency and Renewable Energy
Forrestal Building, Mail Station EE-10
1000 Independence Avenue, S.W.
Washington, DC 20585
Phone: (202) 586-2206

1.2 Qualifying Facilities Certification

LFGTE projects that generate electricity will benefit from Qualifying Facilities (QF) certification, which is granted through the Federal Energy Regulatory Commission (FERC). The following describes the benefits of QF status and the steps for applying for such status.

The Public Utility Regulatory Policies Act (PURPA) — one of five parts of the National Energy Act of 1978 — was designed to promote conservation of energy and energy security by removing barriers to the development of cogeneration facilities and facilities that employ waste or renewable fuels. Such facilities are called Qualifying Facilities, or QFs. Under PURPA, utilities are required to purchase electricity from QFs at each utility's avoided cost of generating power. PURPA provides that a small power production facility, such as a LFGTE project that meets FERC standards, can become a QF.

[4] Final Rule Making, 10 Federal Register Part 451, July 19, 1995, Vol. 60, No. 138.

In order to apply for QF status, applicants must prepare either (1) a Notice of Self-Certification, which asserts compliance with the FERC's technical and ownership criteria, or (2) an Application for Commission Certification of Qualifying Status, which requires a draft Federal Register notice and which provides actual FERC approval of QF status. In either case, the applicant must also file Form 565, which is a list of questions about the project, and must pay any filing fees associated with certifications, exemptions, and other activities. FERC will provide the QF "Info Packet" that describes the necessary steps, requirements, and background information. After submittal of the initial application, further justifications and submittal of information may be required.

For the QF Info Packet and applications, contact:

Federal Energy Regulatory Commission
Qualifying Facilities Division
825 North Capitol Street, N.E.
Washington, DC 20426
Phone: (202) 208-0577
http://www.ferc.fed.us

1.3 Section 29 Tax Credit

Developers of LFGTE projects who sell LFG to an unrelated third party may qualify for a tax credit under Section 29 of the Internal Revenue Service (IRS) tax code. In order to take advantage of the credits, project developers may bring in an outside party when developing power projects. The Section 29 tax credit was established in 1979 to encourage development of unconventional gas resources, such as landfill gas. Section 29 tax credits are available through 2007 to LFG projects that have a gas sales agreement in place by December 31, 1996 and are placed in service by June 30, 1998. The credit has been extended several times by the U.S. Congress, and currently it is discontinued.

2. State Incentive Programs

The State of Florida does not currently provide tax incentives for LFGTE projects. However, as a State Ally in the Landfill Methane Outreach Program, the Florida Department of Environmental Protection will continue to evaluate the creation of further incentives within Florida for this purpose.

3. Electricity Restructuring and LFGTE

What Is Electricity Restructuring?

Electricity restructuring refers to the introduction of competition into both the wholesale and retail electricity markets. Until now, electric utilities operated as monopolies authorized by federal and state regulatory authorities as the sole provider of electric service to consumers within a specific service territory. Under restructuring, utilities will lose these monopolies, enabling other energy providers to compete for their customers. The result may be more energy options for consumers, lower energy prices, and greater use of renewable energy sources.

Efforts to restructure the electric utility industry began in 1978 with passage of the Public Utilities Regulatory Policies Act (PURPA), which required utilities to buy a portion of their power from unregulated power generators in an effort to encourage the development of smaller generating facilities, new technologies, and renewable energy sources. The National Energy Policy Act of 1992 (EPACT) expanded on PURPA, allowing more types of unregulated compa-

nies to generate and sell electricity, effectively creating a competitive wholesale market for electric power.

Restructuring at the retail level has been a hot issue in many states since the passage of EPACT, which delegated states the authority to introduce competition among electric utilities within their borders. As of January 1999, 22 states have enacted some form of restructuring legislation, while the remaining 28 are considering such legislation.

How Do These Changes Affect Landfill Gas Recovery?

Many states are including renewable energy provisions in their restructuring legislation. Such provisions mandate utilities to include a certain percentage of electricity generated from renewable, or "green energy," sources into their energy mixes. LFGTE is one such green energy source.

In March 1998, the Clinton Administration unveiled its "Comprehensive Electricity Competition Plan" to restructure the electricity industry nationwide. Contained in that proposal is a Renewable Portfolio Standard (RPS) that would guarantee that a minimum percentage of the nation's electricity be powered by green energy. Energy service providers would be required to cover a percentage of their electricity sales with generation from non-hydroelectric renewable sources such as wind, solar, geothermal, and biomass (which includes LFGTE).

Marketing Landfill Gas Recovery as Green Power

One of the emerging areas and most promising mechanisms to encourage utilities and other energy marketers to participate in LFGTE projects is the development of green marketing programs. Green marketing programs are designed to enable energy marketers to position renewable energy products (including LFGTE) as premium products, and therefore, collect a premium price from their customers. In addition, green marketing allows energy marketers in competitive marketplaces to differentiate their energy product, and allows utilities in non-restructured marketplaces to gain critical product marketing experience in preparation for competition. However, the general public is less familiar with LFGTE than other sources of renewable energy; support from the LMOP can help ensure the success of early LFGTE green marketing efforts.

Get the Latest Information on Electricity Restructuring in Your State

For up-to-date information on electricity restructuring in Florida, visit the National Conference of State Legislatures Web site at: http://www.ncsl.org/programs/esnr/restru.htm. This site contains a glossary of terms related to restructuring, as well as links to the full text of restructuring legislation passed by states.

Appendix A: State Contacts

State of Florida
Department of Environmental Protection
Mary Jean Yon
Solid Waste Section (MS #4565)
State of Florida Department of Environmental Protection
600 Blair Stone Road
Tallahassee, FL 32399-2400
Tel: (850) 488-0300
Fax: (850) 414-0414

Central District
(Brevard, Indian River, Lake, Marion, Orange, Osceloa, Seminole and Volusia)
Vivian F. Garfein, Director
3319 Maguire Boulevard, Suite 232
Orlando, FL 32803-3767
Tel: (407) 894-7555
Fax: (407) 897-2966

Air Resources Program Administrator - Len Kozlov
Waste Program Administrator- Bill Bostwick

Central District Satellite Office
Debra Valin
13 East Melbourne Avenue
Melbourne, FL 32901
Tel: (407) 984-4800
Fax: (407) 984-4809

Northwest District
(Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Okaloosa, Santa Rosa, Wakulla, Walton and Washington)
Bob Cooley, Director
160 Governmental Center
Pensacola, FL 32501-5794
Tel: (850) 444-8300
Fax: (850) 444-8417

Air Resources Program Administrator - Ed Middleswart
Waste Program Administrator- Tom Moody

Northwest District Branch Office
Gary Shaffer
2353 Jenks Avenue
Panama City, FL 32405
Tel: (850) 872-4375

Northwest District Branch Office
Gerry Neubauer
2815 Remington Green Circle, Suite A
Tallahassee, FL 32308
Tel: (850) 488-3704

Northeast District
(Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Flagler, Gilchrist, Hamilton, Jefferson, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns, Suwannee, Taylor and Union)
Ernest E. Frye, Director (x 201)
7825 Baymeadows Way, Suite 200B
Jacksonville, FL 32256-7590
Tel: (850) 448-4300
Fax: (850) 448-4363

Air Resources Program Administrator - Chris Kirts
Waste Program Administrator - Mike Fitzsimmons

Northeast District Branch Office
Patricia Reynolds
5700 Southwest 34 Street, Suite 1204
Gainesville, FL 32608
Tel: (352) 955-2095
Fax: (352) 377-5671

South District
(Charlotte, Collier, Glades, Hendry, Highlands, Lee and Monroe)
Peter Ware, Director
2295 Victoria Avenue, Suite 364
Fort Myers, FL 33901
Tel: (941) 332-6975
Fax: (941) 332-6969

Air Resources Program Administrator - David Knowles
Waste Program Administrator- Phil Barbaccia

South District Satellite Office
Ron McGregor
7451 Gold Course Boulevard
Punta Gorda, FL 33982-9359
Tel: (941) 693-4697

South District Branch Office
R.J. Hebling
2796 Overseas Highway, Suite 221
Marathon, FL 33050
Tel: (305) 289-2310

Southeast District
(Broward, Dade, Martin, Okeechobee, Palm Beach and St. Lucie)
Carlos Rivero de Aguilar, Director
400 North Congress Avenue
West Palm Beach, FL 33401
P.O. Box 15425
West Palm Beach, FL 33416-5425
Tel: (407) 681-6600
Fax: (407) 681-6755

Air Resources Program Administrator - Isidore Goldman
Waste Program Administrator- Vic Kamath

Southeast District Branch Office
John Moulton
1801 Southeast Hillmoor Drive, Suite 204
Port St. Lucie, FL 34952
Tel: (407) 871-7662
Fax: (407) 871-7666

Southwest District
(Citrus, Desoto, Hardee, Hernando, Hillsborough, Levy, Manatee, Marion, Pasco, Polk, Pinellas, Sarasota, Sumter)
Dr. Richard D. Garrity, Director
3804 Coconut Palm Drive
Tampa, FL 33619-8218
Tel: (813) 744-6100 (x 352)
Fax: (813) 744-6084

Air Resources Program
Administrator-
Bill Thomas
Waste Program Administrator–
Bill Kutash

Southwest District

Satellite Office

Steve Thompson
170 Century Boulevard
Bartow, FL 33830-7700
Tel: (941) 534-1448